

2013 Shark Unit – SEFSC/Mississippi Laboratories (MSL); Bottom Longline Surveys

Using as context, two-three or more typical and important stock assessments conducted by the Center, reviewers should address:

1. To what extent do fishery independent survey data quality, statistical precision, and timeliness issues impact overall assessment accuracy, precision and timeliness?

Concerning data quality, MSL longline data are completely edited (many elements are real-time edited during surveys) and made available generally within 60 – 90 days of a survey's completion. Problematic species identifications can often be further verified with photographic documentation or from genetic sampling (budget contingent). Additional data quality is achieved through user group responses to samples provided. MSL "gold copy" data are the archived master files with user-limited editing access for a data management representative and at least two shark unit representatives.

Statistical precision is a measurable time series species specific component and is dependent on sampling size (effort, the number of longline stations completed). For bottom longline fisheries independent surveys, with *a priori* sampling it is possible to examine changes in precision as it relates to $CVs < .05$.

2. What are the major fishery independent survey successes and how should they be supported?

Major successes are related to elasmobranch and reef fish management, and on-going research for establishing life history parameters. The bottom longline time series provides the only NMFS/SEFSC broad-based fisheries independent data useful for assessing interannual variability. Potential sources of survey related bias have been controlled through standardized survey design and gear. In particular, the most significant examples of direct links between the time series and successful NMFS management efforts are; the 1993 HMS shark FMP and SEDARS 11, 13, 21, 29 and 34; for red snapper SEDARS 7, 15, and 24; for reef fish SEDARS 10, 11, 19, 33.

3. What are the major fishery independent survey limitations/weaknesses and how could they be resolved? Define potential improvements and priorities for recommended improvements.

Temporal issues are the most limiting factor since the current time series is confined to late summer. A recommended improvement would be to institute a mid to late spring survey using the same survey design and gear; that time frame would provide an index during peak spawning for several reef fish management species as well as provide elasmobranch tagging opportunities during periods of seasonal ingress and egress. Another weakness is the lack of a fisheries independent pelagic longline project. The early effort for developing a pelagic longline based index have been primarily pilot studies with survey design and gear in development. Currently, NMFS do not support an Atlantic or GOM pelagic longline

survey, however, there a number of key management species that would directly benefit from the effort.

4. To what extent do fishery dependent data quality, statistical precision, and timeliness issues impact overall assessment accuracy, precision and timeliness?

The MSL time series is totally independent of fishery dependent variables. For many of the SEDAR examples, the MSL time series is assigned different weighting factors than fisheries dependent data.

5. What are the major fishery dependent data sources successes and how should they be supported?

N/A

6. What are the major fishery dependent data limitations/weaknesses and how could they be resolved? Define potential improvements and priorities for recommended improvements.

N/A

7. What recommendations do you have for prioritizing fishery-independent and fishery-dependent data collection improvements?

With regards to fisheries independent surveys, data collection procedures and protocols are works in progress. With NOAA large ships capable of a variety of SCS/FSCS support, current data collection utilizes GMT time/date stamps to document data elements. A high priority should be place on continued development of FSCS software with regards to expanding data fields and facilitating real-time data editing. An additional ship-laboratory option can include use of large touch-screen monitors linked to scientific computers and used for displaying identification references, identification photographs and sampling requests in laboratory areas. Currently at MSL a field party chief scientific folder (located on the MSL file backup) is being developed for the purpose of assembling a variety of electronic format references for all survey types (fishes, turtles, marine mammals) and survey protocols. Other options that would elevate data collection would be use of a Wi-Fi linked label printer for printing labels on deck (in particular for longline surveys where specimens typically are not sampled in interior lab spaces); transcription errors for sample labeling would be minimized.

8. To what extent are fishery independent and fishery dependent data readily accessible to Center stock assessment scientists and to various external researchers who may wish to replicate NMFS stock assessments?

Fisheries-independent data are generally available within 60 – 90 days of survey completion. Editing is on-going, however, as data are utilized (sometimes errors not detected by editing routines are found) and genetic samples processed (often used to confirm problematic identifications).

9. Identify the highest priority needs for improving fishery dependent and fishery independent data. Define potential improvements.

For fisheries independent data, the highest priority would be for providing more sea days. A sea day increase would produce higher precision in the form of improved CVs < 0.5 for species less frequently captured. The current MSL bottom longline time series is providing adequate indexes for most elasmobranchs and reef fish of SEDAR concern, however, for some species the survey effort expended falls short of adequate. This is primarily due to the nature of the broad-based survey area and other limitations that affect effort (vessel, weather, budget).

Contributions to NMFS Fisheries Management: FMPs and SEDARs

1993 NOAA/NMFS FMP For Sharks Of The Western North Atlantic Ocean

2001 NOAA/NMFS Regulatory Amendment To The Reef Fish Fishery
Management Plan To Set A Red Snapper Rebuilding Plan Through
2032.

2013 Amendment 5 to the Consolidated HMS FMP

SEDAR 000 – Grouper Management Assessment Review

SEDAR 04 – Caribbean – Atlantic Deepwater Snapper – Grouper

SEDAR 05 – Atlantic and Gulf of Mexico King Mackerel

SEDAR 07 – Gulf of Mexico Red Snapper

SEDAR 09 – Gulf of Mexico Grey Triggerfish, Greater Amberjack,
and Vermillion Snapper

SEDAR 10 – South Atlantic and Gulf of Mexico Red Grouper

SEDAR 11 – Large Coastal Shark

SEDAR 12 – Gulf of Mexico Red Grouper

SEDAR 13 – Small Coastal Sharks

SEDAR 15 – South Atlantic Red Snapper and Greater Amberjack

SEDAR 16 – South Atlantic and Gulf of Mexico King Mackerel

SEDAR 19 – South Atlantic and Gulf of Mexico Black Grouper and South Atlantic Red Grouper

SEDAR 21 – HMS Sandbar, Dusky and Blacknose sharks

SEDAR 22 – Gulf of Mexico Yellowedge Grouper and Tilefish

SEDAR 24 – South Atlantic Red Snapper

SEDAR 29 – HMS Gulf of Mexico Blacktip Shark

SEDAR 31 – Gulf of Mexico Red Snapper

SEDAR 33 – Gulf of Mexico Gag Grouper and Greater Amberjack

SEDAR 34 (pending) – Bonnethead and Atlantic Sharpnose sharks

Overarching Questions for Reviewers

- ❑ Relationship of current and planned fishery assessment data activities to Center fishery assessments mandates and requirements – is the Center doing the right things?
- ❑ Opportunities – are there opportunities that the Center should be pursuing in collecting and compiling fishery assessment data, including shared approaches with partners?
- ❑ Scientific/technical approach – are the Center’s fishery data objectives adequate, and is the Center using the best suite of techniques and approaches to meet those objectives?
- ❑ Organization and priorities – is the Center’s fishery data system properly organized to meet its mandates and is the allocation of resources among program appropriate?
- ❑ Scientific conduct – are the Center’s fishery data programs being conducted properly (survey design, standardization, integrity, peer review, transparency, confidentiality, PII, etc.)?